

REMARKS

The applicant thanks the Examiner for the thorough examination in the Office Action dated September 29, 2008. Applicant has amended Claims 19, 21, and 22 to obviate the rejections under 35 U.S.C. § 112. In the Office Action, the Examiner rejected Claims 19-31 and 36-38 under 35 U.S.C. § 103(a) as being unpatentable over Yoshinari in view of Park. The Examiner also rejected Claim 38 as being obvious over Yoshinari in view of the Park reference. In addition, the Examiner also rejected Claims 32 and 35 under 35 U.S.C. § 103(a) as being unpatentable over Yoshinari in view of Park and further in view of Satek. Applicant respectfully traverses each of these rejections.

CLAIMS 19-31 and 36-38

In each of the independent Claims 19, 23, and 38, there is claimed either a high temperature gas turbine component or a gas turbine engine. The specification provides an example of a turbine component including a rotor blade (120) or guide vein (130) of a turbo machine such as a gas turbine or an aircraft or of a power plant for generating electricity, a steam turbine, or a compressor. Claim 38 claims the more detailed components of the gas turbine engine. The rotor blade or guide vein components thereof are composed of metallic materials that are produced by a casting process or by means of a directional solidification, a forging process, milling process, or combination of these processes. These components of a turbine machine are exposed to extreme conditions including extremely high temperatures and rotational forces. Accordingly, these components are comprised mainly of a nickel-based superalloy to enhance thermal efficiency and heat resistance of the components.

Applicant acknowledges that Yoshinari discloses a gas turbine blade that is composed of a nickel-based superalloy that includes other constituents as set forth in Claims 21 and 22 by way of example. However, as the Examiner has acknowledged, Yoshinari does not disclose that the superalloy also contains a metallic strength promoter as provided in Claims 19, 23, and 38. The Examiner's reliance on the Park reference, and the Satek reference for that matter, in combination with the Yoshinari reference, is misplaced.

Park discloses a composition for a catalyst that can be used with a turbine machine in order to reduce nitrogen oxide (NO<sub>x</sub>) output in a combustion product. As set forth in Park,

paragraph 2, engine manufacturers as a result of federal regulations, are being forced to reduce the amount of harmful compounds in the combustion exhaust. Park discloses a  $\gamma$ -gamma aluminum oxide catalyst produced from a sol-gel process. This catalyst is then doped with a metal to enhance the performance of the catalyst, more specifically to enhance the capabilities of the catalyst to reduce the NO<sub>x</sub> output in the combustion product. In paragraph 46, Park discloses a dopant such as indium or indium oxide. In paragraphs 47 and 48, respectively, there is disclosed tin oxide or gallium oxide dopants. As noted, these compositions are used in the process of forming a catalyst. There is no suggestion or reference to using any of these compositions to produce a solid metallic component of a turbine machine such as a rotor blade or guide vein, for example. Indeed, applicant submits that one skilled in the art would not consider the Park reference as an analogous art in arriving at the claimed invention. Indeed, the Park reference provides a composition that is intended for an entirely different purpose as the claimed invention.

Applicant recognizes that it may be *prima facie* obviousness to combine two compositions, each of which is taught by the prior art to be useful **for the same purpose**, in order to form a third composition to be used for the very same purpose...the idea of combining them flows logically from their having been individually taught in the prior art. *In re Kerkhoven*, 66 F.2d 846, 850 (CCPA 1980); MPEP 2144.06. However, in the present case, the Yoshinari and Park patents disclose compositions related to entirely different purposes, i.e., Yoshinari provides a composition for a turbine rotor blade that is sufficiently heat resistant, and Park discloses a composition for a catalyst to reduce NO<sub>x</sub> combustion output. Accordingly, one skilled in the art would not be motivated, nor is there any suggestion in these references, to combine components of the Park catalyst composition, namely the metallic dopant, to the nickel-based superalloy disclosed in Yoshinari to enhance the heat resistant characteristics of the rotor blade in a turbine machine.

In addition, the Examiner's reliance on the *In re Aller* case, 105 USPQ 233 (CCPA 1955) is misplaced. In that case, the applicant claimed the process for decomposing isopropyl benzene hydrogen peroxide and the production thereby of phenol and acetone using an aqueous sulfuric acid at a particular concentration and at a particular temperature range reacting with the peroxides. A virtually identical reaction had been disclosed in a prior art reference with the

exception that the temperature ranges were higher. In the subject application, the general conditions of the pending claims are not disclosed in the prior art. More specifically, there is not disclosed using a metallic strength promoter as part of a superalloy to enhance the characteristics of a turbine component. As stated above, Yoshinari does not disclose using a metallic strength promoter, and the Park reference does not disclose a promoter used with the manufacture of a turbine component. Moreover, the concentrations set forth in the claims are far less than the concentrations provided in the Park reference. The claimed concentrations are 50 parts per million to 2000 parts per million, which converts to 0.005% to 0.2% by weight. Park discloses using dopants or promoters from 1% to 55% by weight with preferred percentages from 2.5% to 50%.

CLAIMS 32-35

As noted above, the Examiner rejected Claims 32-35 based on the combination of Yoshinari, Park, and further in view of Satek. The Examiner relies on the Satek reference as disclosing the use of ruthenium. However, the Examiner fails to explain that similar to Park, the Satek reference discloses a catalyst product in order to reduce the NOx output in a combustion product. Accordingly, the applicant's arguments above as to Claims 19-31 and 36-38, and the combination of Yoshinari and Park apply equally to combining the Satek reference as a basis for rejecting any claims, namely Claims 32-35 in the subject application.

In view of the foregoing, the applicant respectfully requests the Examiner to withdraw the rejections and submits that the pending claims are in condition of allowance.

CONCLUSION

The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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